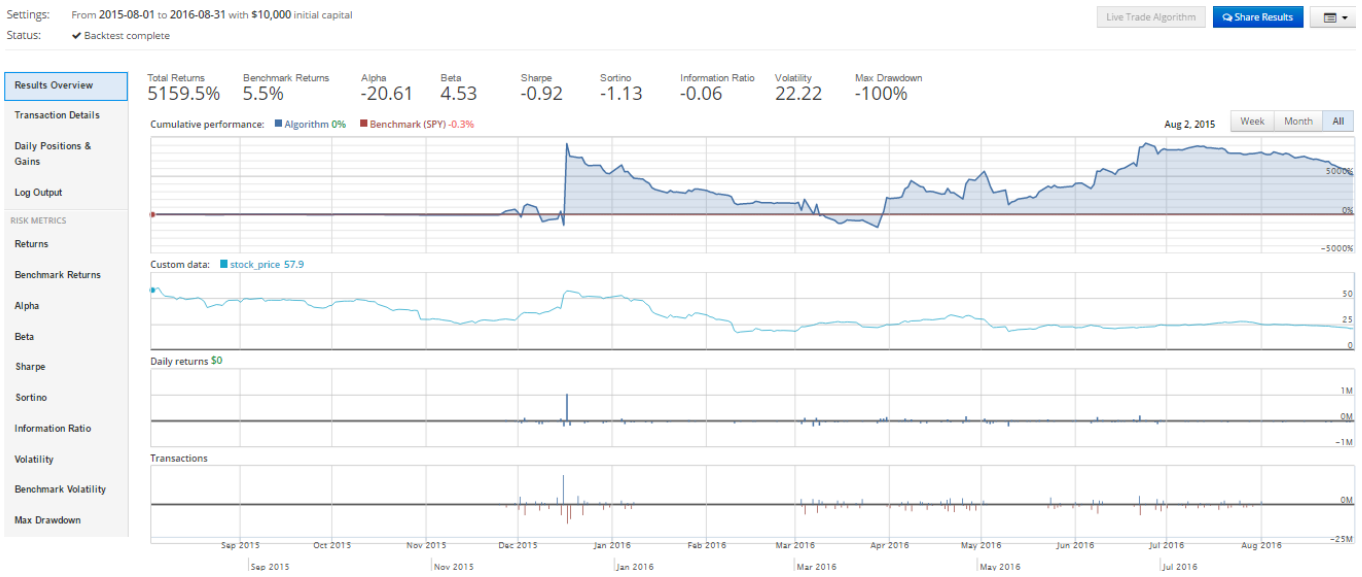
Assignment 04

Code the following in Python on Quantopian framework

You are given the Fourier Transform based Python code that modifies the Basic Trading Strategy running on Quantopian framework. Try it on Quantopian framework to see how it outperforms the benchmark returns (5159.5% vs 5.5%), using $10,000 from 08/01/2015 to 08/31/2016. The comment in the code helps understand. Both the original code (by Quantopian people) and the modified code using Fourier Transform are given to you (You may see some complaints due to some deprecation but it is ok).



After that implement the trading algorithm:

1. (2 point) Write a function that set the coefficients of Y to zero (Y is the inverse DFT) if the coefficients are lower than a given input parameter. Now instead of using a few terms at low frequencies and setting the ones at high frequencies to zero, call the function and give it a percentage that the coefficients are set to zero if they are lower than that percentage of the maximal coefficient.
2. (1 point) Use the record function to plot the series average_rec, and current_rec on the same coordinate system with the stock price.

3. (1 point) Set a variable buy=1 if the algorithm buys and 0 otherwise in the function handle_data. Use the record function to plot the variable. Scale it by multiplying with a constant such that it can be seen on the same coordinate system with the stock price.
4. (1 point) Every week on the Monday print out the current cash 1 minutes after the market opens (use schedule_function)

Submission includes code, all the files if there are, and a document explaining your work and findings with all the possible plots.